



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,578	06/15/2005	Xavier Pruvost	FR 020141	9002
65913	7590	06/17/2008		
NXP, B.V. NXP INTELLECTUAL PROPERTY DEPARTMENT M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131			EXAMINER HU, RUI MENG	
			ART UNIT 2618	PAPER NUMBER
			NOTIFICATION DATE 06/17/2008	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/538,578	<b>Applicant(s)</b> PRUVOST ET AL.	
	<b>Examiner</b> RuiMeng Hu	<b>Art Unit</b> 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Response to Arguments***

1. Applicant's arguments filed have been fully considered but they are not persuasive.

The examiner respectfully submits the prior art reference Raynaud et al. disclose a comparator (figure 4, comparator 16) for forming a difference signal (The comparator means 16 comprise an operational amplifier with hysteresis (column 3 lines 38-39) *thus upon receiving the two input signals the comparator 16 forms a difference between the two input signals; further the comparator 16 forms and outputs a logic level (0 or 1) which represents  $V_d$  is higher or lower than  $V_{ref}$ , either one of the conditions (0 or 1) represents a difference between  $V_d$  and  $V_{ref}$  (higher or lower))* between said output signal and said reference signal (figure 4,  $V_{ref}$ ); and means for directly controlling (figure 4, control signal  $V_p$ ) the amplitude level of the amplified signal (*amplifier 10 is directly controlled based on the difference signal*) using the difference signal (**Note:** *the above limitation is broad in that it is not limited to an interpretation of applying the output signal of the comparator directly to the amplifier as to bias the amplifier*).

Raynaud et al. further disclose (column 1 lines 5-20) that the field of the invention is that of amplifier bias control systems. The invention applies in particular to power microwave amplifiers with a wide output power dynamic range used in

TDMA (Time-Division Multiple Access) signal transmitters and receivers. Therefore one of ordinary skilled in the art would realize that a TDMA receiver inherently comprises the amplifier bias control system and a demodulator for demodulating said amplified signal.

***Response to Amendment***

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. **Claims 1-3 and 5** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Raynaud et al. (US Patent 5430410)** in view of **Kiyohiro (JP 06232665)**.

Consider **claim 1**, Raynaud et al. clearly disclose a tuner (column 1 lines 5-20, a TDMA receiver comprising a gain tuner) comprising: a regulating system for regulating, with respect to a reference level (*figure 1,  $V_{ref}$* ), the amplitude level of an amplified signal produced by an amplifier (*figure 4, means 11, column 3 lines 49-53*), said regulating system comprising: attenuation circuitry (*figure 1, means 12*) for generating an attenuated signal (*figure 1, output of means 12*) from said amplified signal according to a programmable attenuation factor (*column 2, lines 4-7, column 3 lines 30-32, 38-48, 60-64*), and conversion circuitry (*figure 1, diode detector 15, column 4 lines 5-10*) for converting said attenuated signal in order to generate an output signal (*figure 1,  $V_d$* ) for comparison with said reference level ( $V_{ref}$ ), a comparator (*figure 4, comparator 16*) for forming a difference signal between said output signal and said reference signal (*figure 4,  $V_{ref}$* ); and means for directly controlling (*figure 4, control signal  $V_p$* ) the amplitude level of the amplified signal using the difference signal; and a demodulator for demodulating said amplified signal (a TDMA receiver inherently comprises a demodulator for demodulating said amplified signal).

However, Raynaud et al. fail to disclose wherein said conversion circuitry generates said output signal with a level proportional to the square of the effective value of said attenuated signal.

In the same field of endeavor, Kiyohiro discloses a gain control system comprising an variable attenuator 3 for attenuating a feedback signal, a conversion circuitry (*square-law detector 2*) for generating an output signal (*voltage signal*) wherein said conversion circuitry generates said output signal with a level proportional to the square of the effective value of said attenuated signal, and an error detection amplifier 4 for comparing said output signal with a reference level (*figure 1, Abstract, paragraph 9, the square-law detector 2 outputs a voltage signal which is proportional to the square of the magnitude of said attenuated signal*), a comparator (*figure 1, comparator 4*) for forming a difference signal between said output signal and said reference signal (*figure 1, reference signal output of feature 8*); and means for directly controlling (control signal output of comparator 4) the amplitude level of the amplified signal using the difference signal (control signal output of comparator 4).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection technique taught by Kiyohiro into the art of Raynaud et al. as to replace the diode detector 15 with the square-law detector 2 as for enabling the power control mechanism to quickly and effectively adjust the output power to a desired level and the power control mechanism for simplicity.

Consider **claim 2, as applied to claim 1**, Raynaud et al. as modified by Kiyohiro disclose said attenuation means (*figure 1, means 12*) comprise a network of resistances defined by a set of .pi.-structures connected in series, each node of the .pi.-structures being connected to a switch for defining said programmable attenuation factor (*figure 1,*

*attenuators 13n, column 2, lines 4-7, column 3 lines 30-32, 38-48, 60-64, digital attenuators 13n are controlled digitally (switched on or off), achieving same dynamic attenuation results).*

Consider **claim 3, as applied to claim 2**, Raynaud et al. as modified by Kiyohiro disclose the switches are intended to be activated by a command word delivered by a digital bus (*figure 1, control means 17*) (*figure 1, attenuators 13n, column 2, lines 4-7, column 3 lines 30-32, 38-48, 60-64, digital attenuators 13n are controlled digitally (switched on or off).*

Consider **claim 5 as applied to claim 1**, Raynaud et al. as modified by Kiyohiro disclose an integrated circuit comprising the regulating system (Raynaud et al., the integrated circuit of figure 1).

6. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Raynaud et al. (US Patent 5430410)** as modified by **Kiyohiro (JP 06232665)** in view of **Kovacs et al. (US Patent 5422601)**.

Consider **claim 4 as applied to claim 1**, Raynaud et al. as modified by Kiyohiro fail to disclose a voltage comparator including an adjustable voltage/current converter, for generating an output current signal I.sub.AGC being proportional to the difference between said output signal and said reference level.

In the same field of endeavor, Kovacs et al. clearly disclose a voltage comparator (*figure 2, level comparator 42, column 3 lines 47-66*) including an adjustable voltage/current converter (*figure 2, Voltage to Current Converter 44, Gain Switch Input*

*Circuit 54*), for generating an output current signal I.sub.AGC (*figure 2, gain control input of VGA 12*) being proportional to the difference between said output signal (*figure 2, output of 40*) and said reference level (*figure 2, output of 52*).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection technique taught by Kovacs et al. into the art of Raynaud et al. as modified by Kiyohiro as to include an adjustable voltage to current converter for providing dynamic control over signal amplification.

### **Conclusion**

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.



Any response to this Office Action should be **faxed to (571) 273-8300 or mailed**

**to:** Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**Hand-delivered responses** should be brought to

Customer Service Window  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RuiMeng Hu whose telephone number is 571-270-1105. The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on 571-272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number: 10/538,578

Page 9

Art Unit: 2618

*RuiMeng Hu*

R.H./rh

May 29, 2008

/Edward Urban/

Supervisory Patent Examiner, Art Unit 2618